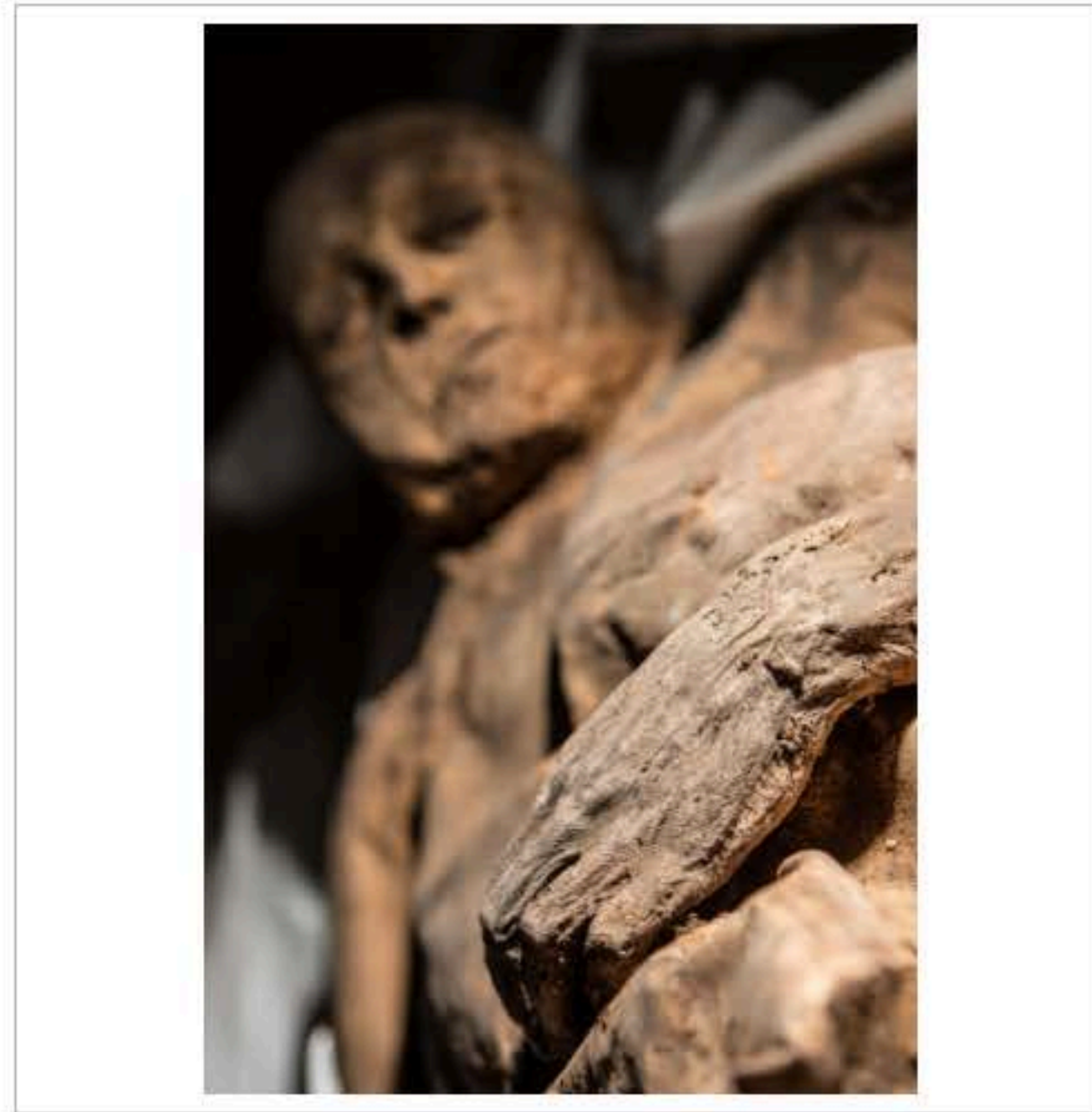


# EXHIBIT D

# Child Mummy Found in Lithuanian Crypt (IMAGE)

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**CAPTION**  
The image shows a mummy discovered through collaboration with the Lithuanian Mummy Project in 2015. Samples from this mummy were found to house degraded samples of Variola, the virus that causes smallpox.

**CREDIT**  
Kiril Cachovski of the Lithuanian Mummy Project, 2015

**USAGE RESTRICTIONS**  
Credit Required.

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## More on this News Release

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## KEYWORDS

- BIOLOGY
- EVOLUTION
- GENETICS
- HISTORY
- INFECTIOUS/EMERGING DISEASES
- VIROLOGY

## MULTIMEDIA

- Child Mummy Found in Lithuanian Crypt (IMAGE)
- Hands of a Child Mummy (IMAGE)
- Lithuanian Crypt (IMAGE)

## RELATED JOURNAL ARTICLE

<http://dx.doi.org/10.1016/j.cub.2016.10.061>









SEARCH ARCHIVE

ADVANCED SEARCH

# Lithuanian Crypt (IMAGE)

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## CAPTION

The image shows the crypt in a church in Lithuania where researchers uncovered a child mummy that carried the oldest known samples of variola, the virus that causes smallpox.

## CREDIT

Kiril Cachovski of the Lithuanian Mummy Project, 2015

## USAGE RESTRICTIONS

Credit Required.

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PUBLIC RELEASE: 8-DEC-2016

## Child mummy offers revised history of smallpox

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A child mummy from the 17th century, found in a crypt underneath a Lithuanian church, was discovered to harbor the oldest known sample of the variola virus that causes smallpox. Researchers who sequenced the virus say it could help answer lingering questions about the history of smallpox, including how recently it appeared in humans (perhaps more recently than we thought) and when specific evolutionary events occurred. Their study appears December 8 in *Current Biology*.

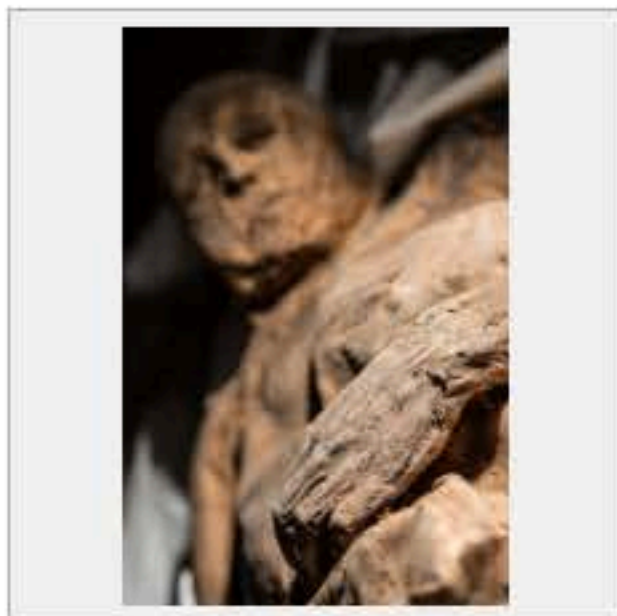


IMAGE: THE IMAGE SHOWS A MUMMY DISCOVERED THROUGH COLLABORATION WITH THE LITHUANIAN MUMMY PROJECT IN 2015. SAMPLES FROM THIS MUMMY WERE FOUND TO HOUSE DEGRADED SAMPLES OF VARIOLA, THE VIRUS... [view more](#) >

CREDIT: KIRIL CACHOVSKI OF THE LITHUANIAN MUMMY PROJECT, 2015

"There have been signs that Egyptian mummies that are 3,000 to 4,000 years old have pockmarked scarring that have been interpreted as cases of smallpox," says first author Ana Duggan, a postdoctoral fellow at the McMaster University Ancient DNA Center in Canada. "The new discoveries really throw those findings into question, and they suggest that the timeline of smallpox in human populations might be incorrect."

The research team gathered the disintegrated variola virus DNA from the mummy after obtaining permission from the World Health Organization. Using RNA baits designed from existing variola sequences, the researchers targeted variola sequences found within the extracted DNA from the mummy's skin. Then they reconstructed the entire genome of the ancient strain of the virus and compared it to versions of the variola virus genome dating from the mid-1900s and before its eradication in the late 1970s. They concluded that these samples shared a common viral ancestor that originated sometime between 1588 and 1645.

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